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MEMORANDUM **CH2MHILL**

Taylor Lumber and Treating Superfund Site Errata Sheet for RI/FS Report

TO: Karen Keeley/EPA

FROM: Michael Niemet/CH2M HILL
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DATE: May 18, 2005

PROJECT NUMBER: 184362.PR.01

The *Taylor Lumber and Treating Superfund Site RI/FS Report* (CH2M HILL, revised December 2004) was distributed to the review team on February 25, 2005. Comments were received by the Confederated Tribe of the Grande Ronde Community of Oregon and the Oregon Department of Environmental Quality (DEQ). All comments were reviewed by EPA and are addressed in this errata sheet. Selected sections and figures of the report were revised. PDF files were generated for the revised elements, which can be printed and inserted into the original document in place of the existing sections or figures. For comments that were not addressed in the errata, a response to comments was prepared.

The errata are listed below by volume and section, followed by the responses to comments. This errata sheet in combination with the RI/FS Report distributed in February will represent the *Final Taylor Lumber and Treating Superfund Site RI/FS Report.*

Remedial Investigation (RI)

Insert revised Figures 4-1 and 4-2 into document (see attached files: RI_F4-1.PDF and RI_F4-2.PDF).

Baseline Risk Assessment (BLRA)

Executive Summary

Insert revised section text into document (see attached file: BLRA_ES.PDF).

Section 2

Table 2-1: The depth interval for samples where a dash ("-") is listed, should be specified as 0 - 0.5 feet.

Table 2-5: Change the label of the last column to "matrix".

Tables 2-5 – 2-13, 2-18, 2-20: The units columns should mg/kg, not mg/Kg.

Tables 2-5 – 2-20: The abbreviation for Exposure Point Concentration (EPC) should be included in the footnotes.

Tables 2-8 - 2-20: Instances of "MAXDET (<MinNumSamps)" should be changed to "Max Detect".

Section 3

Page 3-6, first sentence, first full paragraph: Add the word "contact" between "into" and "with".

Page 3-6, last paragraph: Add the sentence, "The fish consumption rates for tribal individuals may be much higher than those considered as typical in the U.S."

Page 3-8, first paragraph: Add the sentences, "The analytical results for all residential surface soil samples can be found in Appendix A-5 of the RI Report. Residential sample locations are shown on Figures 4-6 and 4-7 of the RI Report."

Page 3-8, last sentence: "Tables 2-13 and 2-14" should be changed to "Tables 2-15 and 2-16".

Figure 3-2: As with the South Yamhill River, a potential exposure pathway should be drawn from Rock Creek to Consumption of Fish. Tribal Users should be added to the Primary Exposed Population under Consumption of Fish.

Section 4

Insert revised section text into document (see attached file: BLRA_S4.PDF).

Table 4-4: The alignment for the SFo and SFi column headings should be corrected.

Table 4-4: The codes for the "Source" columns are defined on the last page (page 3) of the table.

Table 4-6: Change Exposure Point Concentration column heading to EPC.

Table 4-6: Units should be µg/kg, not ug/kg.

Table 4-11: Units should be µg/L, not ug/L.

Table 4-18: Change Exposure Point Concentration column heading to EPC.

Table 4-18: Units should be µg/kg, not ug/kg.

Tables 4-11, 4-12, and 4-19: A footnote should be added to the Human Health Fish Ingestion - AWCQ (sixth column) for each of these tables, as follows, "The federal AWQC used in this screening were based upon a cancer risk level of 10^{-6} or a HQ of 1, and assumed a fish consumption rate of 17.5 grams per day (g/d). In the fish consumption survey done for four Columbia River Basin tribes by the Columbia River Intertribal Fish Commission (CRITFC), the 95th percentile fish consumption rate was 175 g/day for adult consumers. [This number was extrapolated from CRITFC (1994; Table 10) and reported in the RI/FS Work Plan for the Portland Harbor Superfund Site (Lower Willamette Group 2004; Appendix C).] Screening criteria based on this higher ingestion rate would be about an order of magnitude lower. Other tribal consumption surveys show that the fish consumption rate may be higher for subsistence fishers."

Section 5

Page 5-3, Ecological Setting: The first sentence should read, "The ecological setting encompasses terrestrial and aquatic habitats within the vicinity of TLT (see Figure 2-1)".

Page 5-4, first full paragraph: Delete the last 2 sentences.

Page 5-4, second full paragraph: Add the sentence, "The degree of vegetation varies seasonally, and a result of county and state ditch maintenance activities."

Page 5-5, first paragraph, third sentence: Revise as follows, "Bass, bluegill, shiners, suckers, lamprey, and sculpin are examples of other fish that inhabit the South Yamhill River."

Page 5-19, first full paragraph, second to last sentence: Revise sentence to read, "Six out of seventeen residences had manganese concentrations exceeding 1,000 mg/kg."

Page 5-23, Section 5.8.3, last paragraph: Add the sentence, "For example, sampling groundwater through copper or galvanized piping could result concentrations of copper and zinc, respectively, which are biased high".

Page 5-23, Section 5.8.3, third paragraph, first sentence: Sentence should read "...however few bioaccumulative compounds (e.g., dioxins, DDT, etc.; see Tables 2-18 and 2-20) were detected..."

Table 5-3: The footnotes on the column headings are not legible. The column headings should read, starting with the 5th column: Food Intake (kg/kg-bw/d) [d], Water Intake (L/kg-bw/d) [e], Home Range (acres) [i], Area Use Factor [f], Migration Factor [g], Food Ingestion from Site (L/kg-bw/d) [h], Water Ingestion from Site (L/kg-bw/d) [h].

Section 6

Page 6-2: Add the reference, "Lower Willamette Group. 2004. *Portland Harbor RI/FS Programmatic Work Plan.* http://yosemite.epa.gov/R10/CLEANUP.NSF/9f3c21896330b4898825687b007a0f33/b4ec813600f4469a88256ee10077d6ef/$FILE/2004-04-23_-_WP_Text.pdf."

Feasibility Study (FS)

Page 1-7, footnote: The footnote should be deleted.

Page 1-10, first full paragraph, last sentence: Revise sentence to read, "Considering the low factors of exceedances of surface water benchmarks for site-related constituents (HQ of 1.1 for PCP in one well) in shallow groundwater, and the distance between the wells and the river (~300 feet), the effective HQ to hyporheic, benthic, or aquatic organisms using Rock Creek and the South Yamhill River will be below 1.0.

Page 1-10, Section 1.4.8, 3rd paragraph, 6th sentence: Revise sentence to read, "Ingestion rates as high as 175 g/d (CRITFC, 1994) have been reported for the 95 percent upper confidence level (UCL) for tribal exposure scenarios in the Columbia River Basin; the ingestion rates for some individuals may be even higher."

Page 1-10, Section 1.4.8, 3rd paragraph: Add the following sentence to the end of the paragraph, "The spatial distribution of dioxin in the South Yamhill River and Rock Creek do not indicate that TLT is a source if dioxin in surface water."

Pages 2-4 and 2-5, Section 2.1.2: Remove subheadings "Floodplain" and "Endangered Species Act".

Page 2-8: Replace the last sentence in the second paragraph in Section 2.2 ("The remediation goals, also referred to as cleanup levels, represent the expected residual contaminant levels following a successful remedial action.") with the following: "These goals are used in the FS to evaluate various alternatives, however, the final remediation goals will be determined by EPA.

Table 2-2.: Add footnote to "Notes" heading: Remediation goals are used in the FS to evaluate various alternatives, however, the final remediation goals will be determined by EPA.

Page 3-3, under subheading AC Capping, last paragraph, 2nd sentence: Delete the following, "should have capacity because it".

Page 3-13, Interceptor Trenches, 3rd paragraph, 2nd sentence: Add the word "to", so the end of the sentence reads, "and therefore would not be expected to flow into an interceptor trench".

Page 5-6, first full paragraph: Replace the existing paragraph with "This alternative also caps the non-hot spot soil areas in the West Facility (as opposed to institutional controls considered in SO-2), thereby preventing exposure to workers or trespassers and limiting the migration of contaminants from these areas. However, the incremental increase in the total cost of this alternative to SO-2 ($6.1M) is very high for a non-hot spot industrial area where institutional controls can be readily implemented."

Figure B-4: Sample DS-19 should be circled with an oval.

Responses to Comments

The following responses to comments were prepared for comments not addressed above.

Comments from the Confederated Tribe of the Grande Ronde Community of Oregon (the Tribe)

The majority of comments from the Tribe were responded to in the previous section, through errata revisions to the RI/FS. Remaining comments from the Tribe are addressed below.

BLRA, Section 5.5.3: Include a table for endangered, threatened and rare species including biological characteristics of the species (habitat, range, diet, fecundity).

Inclusion of such a table would provide some additional support for the representativeness of the selected endpoint species to potentially present special status species, however it would not change any risk estimates or impact the risk management decisions at the site. The type of information presented in this section is consistent with guidelines provided in EPA's RI/FS guidance.

BLRA, Section 5.5.4: Include a non-migratory bird that uses the TLT site heavily as an endpoint species.

Although the report discusses the migratory patterns of the selected avian endpoint species, Tier 1 and 2 risk estimates summarized in Tables 5-10 and 5-11, respectively, did not consider migration or foraging area. These factors are only considered when discussing the ecological significance of any Tier 2 exceedances. Thus, the risk estimates assumed that each of the avian endpoint species was non-migratory, precluding the need for an additional non-migratory species.

BLRA, Section 5.6.1: In the section entitled "Consideration of species migration in exposure estimation" the BRA refers to an initial risk estimation where no migration is considered and a "refined risk characterization" where migration and home range are considered. Please include a table summarizing/comparing the different results.

Please see response to the comment on Section 5.5.4 – Both Tier 1 and 2 risk estimates as summarized in Tables 5-10 and 5-11, respectively, conservatively did not account for migration or foraging area.

FS, Section 5.2.1: Discussion of alternative S0-2 indicates that the cap will have to be replaced every 5 years, with a time frame of 30 years. The lack of long-term remediation and prospective failure of the cap was addressed in previous comments and remains a concern of the Tribe. For this alternative, the Tribe [is again suggests creating a ditch 1 ft by 3 ft and removing the top layer of sediment. The Tribe also][1] suggests creating a small interception trench in conjunction with the cap to speed the remediation of the site.

The alternative calls for replacing 25% of the cap every 5 years, not a full replacement. This O&M was included to capture the cost of ensuring the cap remains maintained. We agree that an inceptor trench would be a potentially attractive technology for capturing mobile DNAPL only. However, it appears that the DNAPL pool is not mobile, and is therefore unlikely to flow into an interceptor trench. Also, even if a trench captured a portion (or even the majority) of the DNAPL, the residual immobile DNAPL will remain in place and act as a contaminant source for a very long time. Therefore, interceptor trenches were rejected on similar grounds as DNAPL extraction wells (see Section 3.5.3 of the FS).

Comments from Oregon DEQ

FS, Section 1.4.1 (refer to DEQ's 8/25/04 FS comment #1 and #2): It is our understanding that institutional controls will be used for deeper soils (>2 feet bgs) that exceed 10^{-6} risk level for a trench worker scenario in the West facility area (outside the barrier wall). The FS report is not clear on where and what type of institutional controls will be used to assure trench worker protection. The proposed plan needs to clearly document what type, how and where institutional controls will be implemented.

The Proposed Plan and ROD will provide further discussion and explanation of institutional controls.

FS, Refer to DEQ's 8/25/04 FS comment #3: I (and Angie) would like to discuss the Rock Creek sediments. They were not included in the FS. Clarify how this decision was made. How do the concentrations in the Rock Creek sediments compare against the ditch samples and the ditch cleanup goals.

[1] When asked about this comment, ETI noted that this sentence was not intended be included, and can be deleted.

Refer to RI Section 4.6.5 and Figures 4-5, 4-6, and 4-7. Looking at the maps, it is clear that the hot-spots are in the ditch and that background levels of arsenic are currently found in the Rock Creek sediments. By removing the ditch soil areas shown on Figure 2-1 of the FS, the remaining potential sources of contamination to Rock Creek will be eliminated.

FS: It is our understanding that the current onsite storm water treatment system (with prior approval of DEQ's Water Quality Program) will be used to treat the onsite groundwater that is pumped from outside the barrier wall. We would like confirmation that the treatment system is effective for all of the contaminants including PCP, dioxins, PAHs, and metals.

The storm water treatment system has recently been permitted to treat extracted groundwater from within the barrier wall by ODEQ, and thus, the system is effective for treatment of all the constituents mentioned above. The groundwater from outside the barrier wall, by comparison, contains fewer constituents at much lower concentrations, and thus, the system will also be effective for treatment of this groundwater.

FS: A residual risk assessment should be included in the proposed plan.

A residual risk assessment is not a component of a Proposed Plan. EPA, with our oversight contractor CH2M HILL, and ODEQ discussed this comment during a conference call, and it is understood that the existing Baseline Risk Assessment is appropriate for characterizing site risks and selecting a preferred alternative.

FS: Cleanup goals/action levels for all COCs should be provided in the Proposed Plan for both soils and groundwater. The type of cleanup action for each cleanup goal/action level should be specified (i.e., treatment, intuitional control). This is partially done in the FS. Table 2-2 of the FS gives an action level for arsenic and dioxin, but not all of the COCs and does not clarify what type of cleanup. If arsenic and dioxin are the main risk drivers, than it should be explained how cleaning up to the cleanup goals for arsenic and dioxin will also address the remaining COCs.

The Proposed Plan will identify Chemicals of Concern for each media and will identify cleanup goals.

FS: We would like an update on the status of the well that was installed between MW-10S and PZ-102 to fill the groundwater data gap in that area. Any data available? We would like EPA to reconsider including dioxin in groundwater as COC and as a constituent in the groundwater monitor program. Our experience with PCP has shown that the dioxin contamination does not necessarily correlate well with the PCP contamination.

The well was installed in September 2004 but no water was recovered at that time due to dry weather. The well was sampled for PCP at the end of April 2005. The results will be included in the Proposed Plan and/or ROD. EPA maintains that dioxins are not a COC for groundwater outside of the barrier wall.

FS: (b) (6) Residence - The south parcel of this property was not sampled. DEQ is concerned about the unknown risk in this portion of the property. EPA did a great job expediting a removal action on the northern section of the (b) (6) residential property, but the south parcel was not addressed.

Three composite surface soil samples were collected from the south property at the end of April 2005 to be analyzed for dioxin and metals (the drivers in the north property). The results will be included and addressed in the Proposed Plan and/or ROD.

FS: EPA has determined that no action is required at the East Facility as contamination is within the EPAs 10^{-4} risk level. However, this area is still a concern to DEQ since it exceeds our 10^{-6} risk level.

Comment noted. EPA and ODEQ will continue discussions on this issue.

FS: EPA is considering either no action or institutional controls for the non-hot spot surface soil areas in the West facility. DEQ would like to see implementable institutional controls in this area that can be monitored for effectiveness.

Comment noted.

FS/BLRA: Discuss the soil sediment cleanup goal/ECO Action Level of 6.7 ng/kg (i.e. how it was derived, what species).

An ecological action level for soil in eco-areas (primarily off-site ditches) was developed for dioxin TEQ by back-calculating the concentration (as 2,3,7,8-TCDD equivalents) that corresponded to a HQ = 1 using the same exposure assumptions used in the ecological risk assessment. This LOAEL-based concentration was calculated for each species. The deer mouse was the most susceptible species for dioxin TEQ with a LOAEL-based concentration of 6.7 ng/kg. This number is within the concentration range generally considered to be background for dioxin[2], and was used for screening purposes to define target areas for remediation. The ditches will be remediated, and this concentration will not necessarily be the final cleanup goal for the ditch soil.

[2] U.S.EPA. Exposure and Human Health Reassessment of 2,3,7,8-Tetrachlorodibenzo-p-Dioxin (TCDD) and Related Compounds National Academy Sciences (NAS) Review Draft. (December 2003) –Volume 2, Chapter 3.